BOWLES's

ARTISTS ASSISTANT

IN 1422. a. 20.

DRAWING,
PERSPECTIVE,
ETCHING,
ENGRAVING,

MEZZOTINTO-SCRAPING,
PAINTING on GLASS, in CRAYONS, and in WATER-COLOURS,

And on SILKS and SATTINS.

Containing the Eaſieſt and moſt Comprehenſive

RULES

For the Attainment of thoſe truly

USEFUL AND POLITE ARTS,

Methodically digeſted, and adapted to

The CAPACITIES OF YOUNG BEGINNERS,

ILLUSTRATED WITH

SUITABLE EXAMPLES ENGRAVED ON FOUR COPPER-PLATES.

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PREFACE.

IT has ever been the Misfortune of thoſe who have profeſſed to lay down Rules for the Attainment of any Art or Science, to leave them enveloped with Difficulties, which, if not utterly inſuperable, at leaſt diſcourage the Learner from proceeding in a Study which he can have little Hopes will ever reward his Purſuit.

From hence we may reaſonably infer, that the ſaid Profeſſors were totally unacquainted, if not with the Theory, at leaſt with the practical Part of what they undertook to teach others; and that the Inſtructions they have given were founded rather upon a bare Suppoſition of their Efficacy, than upon the ſurer Baſis of long and repeated Experience, which alone could have enſured their Succeſs, and from which, with all due Deference to the Judicious, (whoſe Sanction we ſhall at all Times be ambitious to deſerve) we may venture to anſwer for the Practicability of our own.

To obviate every Objection, and to remove all thoſe Difficulties which had ſo long blocked up the Path of Science, and retarded, if not wholly impeded the Pupil, in his Progreſs to the Temple of Fame, was the chief View in compiling the ſubſequent little Treatiſe.

Over and above the Improvements made in illuſtrating the ſeveral Arts hitherto ſo imperfectly and unintelligibly explained, we have introduced Directions for *Scraping* in *Mezzotinto*, which, in this Edition, are ſtill farther enlarged, and which, as they have never been before attempted in any Book of this kind, we flatter ourſelves will be the more acceptable; eſpecially when it ſhall appear from the Rules laid down for the Performance of this Art, that it is ſo eaſy to be attained, that a tolerable Proficiency in *Drawing* will enable any one to undertake it with all imaginable Proſpect of Succeſs.

The Reader will alſo find, in this Impreſſion, the Addition of very uſeful Problems, in the Article of Perſpective, illuſtrated by a new Plate.

As this Book is chiefly intended for the Uſe of young Practitioners, we have purpoſely avoided all abſtruſe Expreſſions and obſolete Terms, contenting ourſelves with ſuch a familiar Stile as we judged moſt likely to inform thoſe Minds we would wiſh to improve: Yet, as the Ideas of an Artiſt are not wholly to be conveyed without ſome neceſſary Terms peculiar to each Branch, we have taken Care to explain ſuch as could not be omitted without a manifeſt Injury to the Work, by familiar Words of a ſynonymous Tendency, wherever they occur; ſo that we apprehend we have not left the leaſt Stumbling-block for the Reader to encounter.

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THE

THE

ARTISTS ASSISTANT, &c.

CHAP. I.

Of DRAWING.

DRAWING is the Art of repreſenting by Outlines and Shadows, the various Productions of Nature and Art, and of enlarging and contracting Objects in the moſt exact Proportion.

This Art recalls to our Memory Things long ſince paſt, and reſcues from Oblivion the Deeds of our moſt illuſtrious Anceſtors, at the ſame Time that it revives their Image in our Mind, by preſerving their Features for many Generations. In a Word, it may be ſaid to be the ſilent, but moſt expreſſive Language of Nature, which ſpeaks to the Eye, is underſtood by all Nations, and conveys an Idea where even Words themſelves would prove deficient.

After giving ſome general Directions for the Attainment of this truly polite and rational Amuſement, which is the Baſis on which all the reſt of the Arts

depend, we ſhall conſider it more particularly under the following Heads, and lay down the moſt copious and intelligible Rules for each reſpectively, *viz.*

Copying of Draughts,
Enlarging and Contracting,
Imitation of Life,
Drapery,
Landſkip,
Light and Shadow,
Hiſtory.

The Implements neceſſary for Drawing are, A Ruler, Compaſſes, Charcoal, a Black-lead Pencil, Penknife, Porte-Crayons, Black, White, and Red Chalk, Crayons, *Indian* Ink, Crow-Quill Pens, Camel's Hair Pencils, Fitches, Paper of ſeveral Sorts, and Porte-Folios.

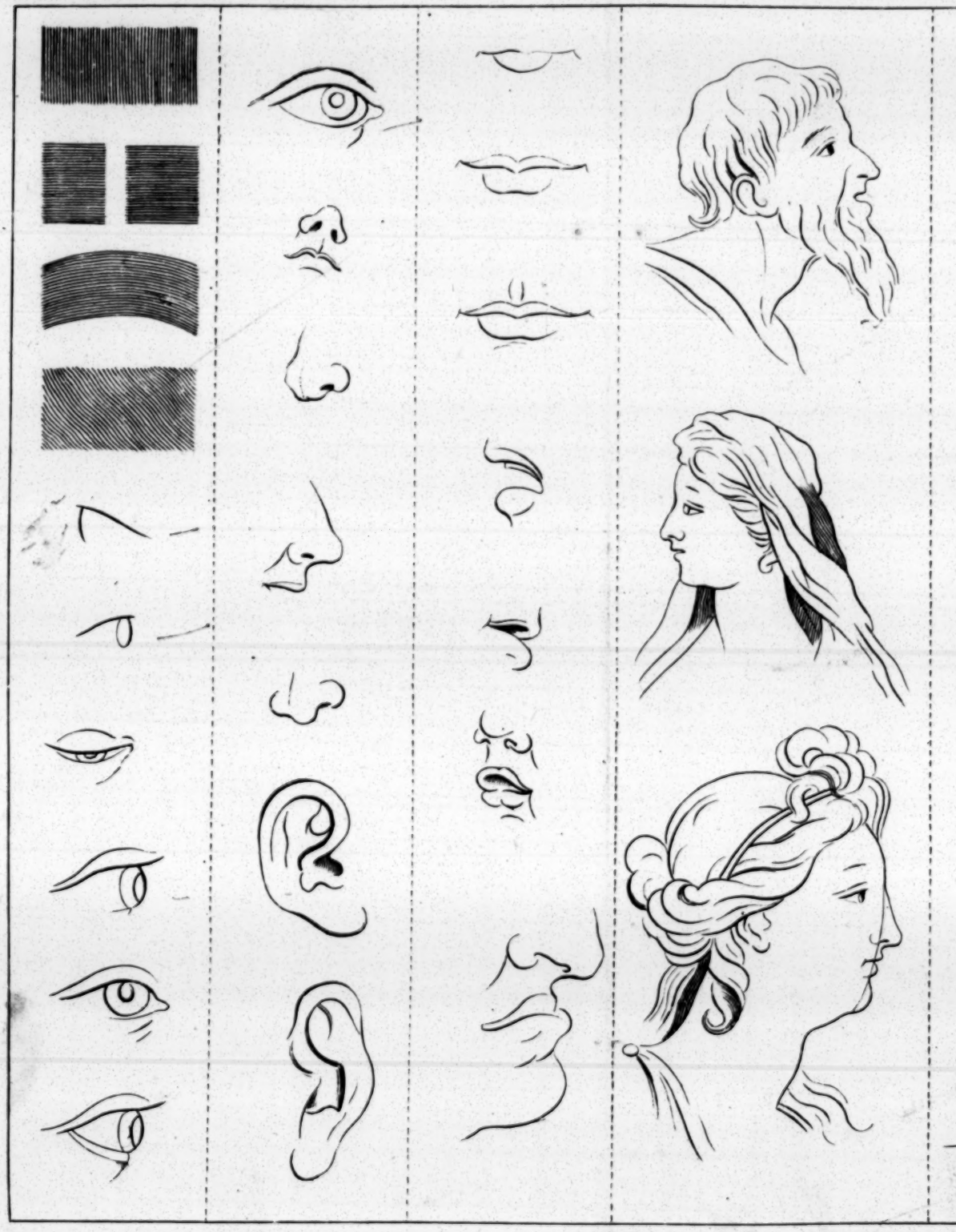
GENERAL RULES *for* DRAWING.

THE firſt Thing to be obſerved is the Choice of proper Originals; and here we would recommend *Le Clerc*'s Youth's Aſſiſtant in Drawing, as the eaſieſt and beſt calculated for the Inſtruction of Beginners. This may be had, Price 3*s*. at No. 69, in *St. Paul's Church-Yard.*

Having provided this, begin with the Outlines of the ſeveral Features, as Eyes, Noſe, Mouth, Ears, *&c.* as they occur in the Book. Practice theſe often over, till you are quite Maſter of them; then proceed to a Profile or Side-Face, after that to an Oval or Full Face; always remembering that each of theſe muſt be perfectly attained before you venture to proceed further.

When you can copy a Face correctly, the next Thing is, to draw the ſeveral Limbs or Parts of the Body, as the Hands, Arms, Feet, Legs, *&c.* then go on to the Body itſelf; which being done, you will

FIRST DRAWING PLATE.



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will be able to undertake a whole Figure, obſerving carefully the exact Prooprtions and Bearings of one Part with reſpect to the other.

The Learner ought to be particularly cautious that he do not attempt a whole Figure before he has made himſelf Maſter of the ſeveral Parts, for this is beginning the Work at the wrong End, and is indeed the ſame Thing, as if a Man ſhould attempt to climb to the Top of the Houſe without the Help of the Stairs.

As for Beaſts, Birds, Fruit, Plants, *&c.* we deem it uſeleſs to give Directions for Drawing them, as it is well known, that he who has ſo far improved his Ideas as to be able to draw a human Figure correctly, will find it no Difficulty to perform every other Branch of this Art.

Sketch or draw all your Outlines faintly, with a Piece of ſoft Charcoal (which may be known by the Pith in the Middle) cut to a Point like a Pencil; and when you ſee any Thing amiſs, whiſk it out with a Handkerchief or Feather, correct your Errors with a Black-Lead Pencil, and compare your Work with the Original, till every Part of them perfectly correſpond. This done, finiſh your Outlines with Black-Lead or *Indian* Ink. This Advice, properly attended to, will ſave you an infinite deal of Trouble, in drawing over and over again, to your no ſmall Diſcouragement.

If you prefer *Indian* Ink, rub it with Water upon a Marble (ſold for that Purpoſe at No. 69, in *St. Paul's Church-Yard)* and with a Crow-Quill Pen perfect your Outlines; then rub out the Marks of the Pencil with Bread —Keep three or four different Shades of Ink in the Hollows of your Stone, to diſtinguiſh your Diſtances, reſerving one of the Holes for Water.

When you are thoroughly verſed in the Outlines, your next Buſineſs will be to learn to ſhadow: But of this hereafter, under the Article of *Light* and *Shade*.

Be

Be not too haſty at firſt ſetting out, which will impede your Progreſs, and hinder your Improvement; whereas, by beſtowing a little more Time, you will attain Perfection ſooner than you can well imagine, and Expedition will come of itſelf as you become more experienced.

Of COPYING *of* DRAUGHTS.

WHEN you would copy a Print or Drawing exactly of the ſame Size, rub the Back of it with the Duſt of Red Chalk or Black Lead; lay this upon your Paper, and pin it down at the four Corners; then with a blunt Point trace the Outlines and Breadths of the Shadows; which done, having carefully examined it, to ſee that nothing be omitted, take it off, and finiſh it with the Pencil or Pen.

Another way to make an exact Copy, and at the ſame Time to preſerve the Original, is, to lay a Piece of tranſparent Paper upon it, and draw the Outlines thereon with a Black lead Pencil; then between that and the Paper you intend to draw upon, place a Piece of thin Poſt-Paper, reddened or blackened at the Back; after which, proceed to trace and finiſh it according to the foregoing Rule.

If you would reverſe your Original, you need only turn the tranſparent Paper, with the Drawing you have made upon it, downwards upon the Poſt-Paper, and trace it as above directed.

The tranſparent Paper may be had at No. 69, *St. Paul's Church-Yard.*

Of ENLARGING *and* CONTRACTING.

DIVIDE your Original with a Pair of Compaſſes into any Number of Squares, and rule them acroſs with a Black-lead Pencil from Side to Side, and from Top to Bottom.

Then

SECOND DRAWING PLATE.

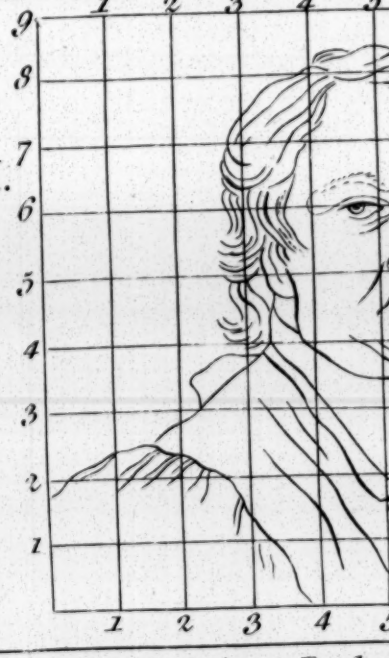

Fig. II.

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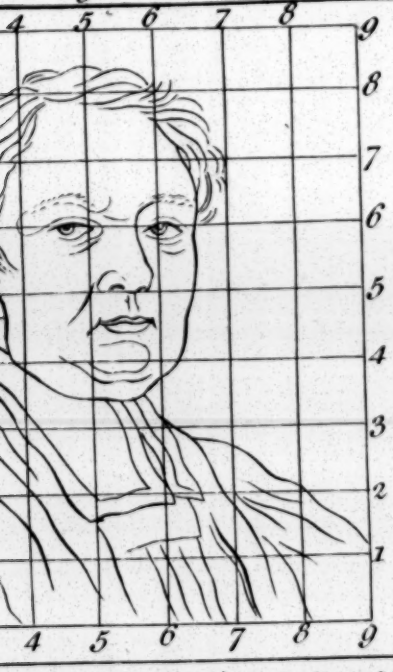
Fig.I.



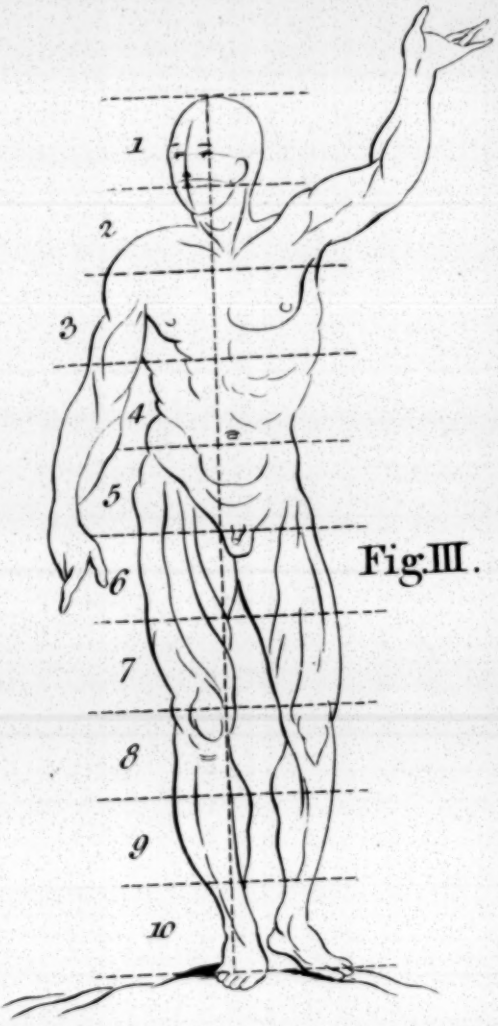
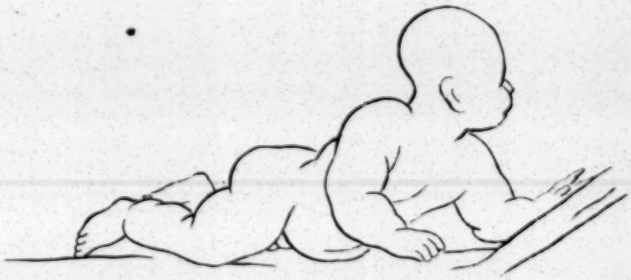


Fig.III.



Bowles N.º 69 in S.t Pauls Church Yard, London.

Then, having your Paper of the Size you intend, divide it into the ſame Number of Squares, either bigger or leſs, as you would enlarge or contract it.

Place your Original before you, and draw Square by Square the ſeveral Parts, obſerving to make the Part you are drawing fall into the ſame Part of the Square as it does in your Original. To prevent Miſtakes, number the Squares, both of the Original and Copy, as in *Fig.* I. and II. of the Drawing-Plate.

Then outline it with *Indian* Ink, rub out the Marks of the Pencil with Bread, and ſhade it at Pleaſure.

Of IMITATION *of* LIFE.

LET the Perſon you draw after be of a proportionable Size, and well-ſhaped; place him in the eaſieſt and moſt natural Attitude; then ſketch faintly with your Charcoal the Head, or any of the Limbs ſeparately; which having carefully done, proceed to finiſh with your Pencil.

When you have ſufficiently practiſed the ſeveral Parts or Limbs, you may draw the whole Figure, in whatever Attitude you think proper to place it; beginning with the eaſieſt and proceeding by degrees to the more difficult Poſtures, as Time and Experience ſhall enable you.

Be ſure to finiſh your Outline ſo correctly, (marking all the Muſcles as they occur) that, even before you give it any Shadow, it may have ſome Reſemblance of the Perſon.

The true Proportion which one Part of a Human Figure bears to another, may be ſeen in *Fig.* III. which will ſerve as a Standard to examine your Drawing by; except where the Figure is to be foreſhortened, in which Caſe Nature will be the beſt Guide.

In

In drawing of a Likeneſs, Care muſt be taken to expreſs the Paſſions in the moſt lively Manner; which is to be done, by obſerving the peculiar Caſt and Diſpoſition of every Feature, with the exacteſt Nicety: And as this is, of all the Parts of Drawing, by far the moſt difficult, it will require a more than ordinary Attention, and ſhould be laſt attempted.

Of DRAPERY.

DRAPERY is the Art of cloathing your Figures with Elegance and Propriety.

When your naked Figure is outlined, firſt draw the Outlines of the Drapery lightly, then the greater Folds, and afterwards the leſſer, obſerving never to let them croſs each other.

Particular Regard is to be had to the Quality of the Drapery, as the Folds of Stuff or woolen Cloth are more abrupt and harſh, and thoſe of Silk more flowing and eaſy. Linen, Cambrick, Gauze, *&c.* as their Subſtance is lighter than either, require a ſtill greater Delicacy in expreſſing the waving of the Folds, by the Faintneſs of their Shadows.

The Drapery ſhould not ſtick too cloſe to the Body, but muſt ſeem to flow round it as it were; yet in ſuch a Manner, as that the Motion of the Figure may be free and eaſy. A great Lightneſs and Motion of the Drapery ſhould only be uſed, when the Figures are ſuppoſed to be in much Agitation, or expoſed to the Wind: but in a calm Place, and free from violent Action, their Drapery ſhould be large and flowing, in order to give them a more graceful Appearance.

Let the looſe Parts of the Drapery blown by the Wind all flow one Way; and draw that Part which lies

lies cloſeſt to the Body, before you draw thoſe which fly off.

Suit your Garments to the Body, and make them bend with it: The cloſer the Garment ſticks to the Body, the narrower and ſmaller muſt be the Folds; and if it fits quite cloſe, there will be no Folds at all, but muſt only have a faint Shadow to repreſent the Part of the Body which lies under it.

By obſerving diligently in what Manner the Drapery flows upon any Perſon ſtanding or ſitting before you for that Purpoſe, you will ſee in what Manner to diſpoſe your Folds and Shadows, according to the unerring Rule of Nature.

Of LANDSKIP.

LANDSKIP repreſents the Face of the Country, as it appears to our View, with all the various Objects analogous thereto; as Towns, Caſtles, Churches, Houſes, Trees, Hills, Cattle, Rivers, Rocks, Ruins, *&c.*

Be careful to augment or leſſen every Object, according to its Diſtance, making the moſt remote Objects fainter and leſs diſtinct, as they appear to the Eye, and enlarging them proportionably as they advance nearer.

Shew the Sky cloudy or clear as Occaſion requires; and if you introduce the Sun, let it be riſing or ſetting; either of which Repreſentations will give an additional Grace to your Picture, as they repreſent Nature in its livelieſt and moſt agreeable Appearance.

Adapt every Part of your Landſkip to the Seaſon of the Year, and the Time of the Day you intend it to repreſent; and diſpoſe your Lights and Shades with conſiſtent Propriety.

Laſtly,

Laſtly, we would recommend it to Practitioners in this noble Art, to riſe early in a fine Morning, that they may have a better Idea of the Harmony and Beauty of the Works of the Great Creator, which would wonderfully repleniſh their Minds, as to Colour and Effect.

Of LIGHT *and* SHADE.

THE true Diſtribution of Light and Shade in a Picture is abſolutely neceſſary to be known; as it not only determines the proper Diſtance of one Object from another, without which the Whole would be an undiſtinguiſhable Maſs of Confuſion, but it gives likewiſe to each reſpective Object its Subſtance, Roundneſs, and Effect.

Shadowing is performed with the Pen or Pencil; in either of which great Judgment is required.

Having made your Outlines correct, the firſt Thing is to obſerve from which Side of the Original the Light comes in; which, if natural, is either from the Right-hand or Left; for whenever the Light appears in the Middle of a Picture, and ſeems to glare more than ordinary, it is cauſed by a Candle, a Lamp, or ſome other luminous Body, and is called an artificial Light.

Lay on your light Tints firſt, diſpoſing them as you ſee they are done in the Original; and then proceed to the deeper ones, till you come to the darkeſt Parts of all: For you may at any Time darken your Shadows, when you cannot lighten them.

Let all your Shadows in the ſame Piece fall on the ſame Side; that is, if the Right-ſide of a Man's Face be dark, ſo muſt be the Right-ſide of his Body, Arm, Leg, Thigh, *&c.* But if the light Side be darkened

by the Oppoſition of ſome other Body intercepting the Light, it muſt receive a contrary Shadow.

Make your Shadows fainter as they grow towards the Light, breaking them gradually that they may not appear too ſudden or harſh.

If you ſhade with Black Lead, or with Crayons, you may blend your Shadows, and ſoften them one into another as you require, with a Stump made of Paper or Glove-Leather rolled and tied hard, and cut almoſt to the Point, with which you may alſo weaken your Shades where they are too ſtrong.

When one Part of the Body projects over or before another, the Part projecting muſt receive a ſtronger Light: Thoſe Parts that bend inward muſt be made ſo much the darker, and ſhadowed deepeſt next the Light.

Two equal Lights muſt never be made in the ſame Picture: The ſtrongeſt Light ſhould fall upon the Middle of the Piece, (where the principal Figures ought to ſtand) diminiſhing gradually towards the Extremities.

By frequently examining into Nature, you will have an Opportunity of improving your Ideas of Light and Shade, and will be enabled to form a proper Judgment of the Effect which the different Rays or Degrees of Light will produce in a Picture; for which Reaſon you ſhould never let ſlip an Opportunity of remarking the various Appearances you meet with.

Of HISTORY.

THIS Branch of Drawing preſents to our View Things paſt, preſent, and future.

An Hiſtorical Picture muſt deſcribe the Tranſaction repreſented, in a Manner ſo clear and conſpicuous, as to convey an Idea of it to our Minds, as fully as could

could be done by a verbal Deſcription: And Care muſt be taken to preſerve ſuch an Analogy or Connection between the Figures, that not one may ſeem to be introduced but for ſome End or Purpoſe. And as, in Dramatic Writing, it is eſſential to make every Perſon *ſpeak* conſiſtent with the Part he repreſents, ſo here it will be equally neceſſary to obſerve the ſame Propriety of Character, and make every Figure *look* the Sentiment it is intended to expreſs.

For the Choice of Subjects the Practitioner is left to his Diſcretion. Books will furniſh him with Abundance. But there will be no need to ranſack the *venerable* Rubbiſh of *Greek* or *Roman* Antiquity, while there is ſo fair an Opportunity of doing Juſtice to the Merit of our gallant Countrymen and Fellow-Subjects, by recording the heroic Actions they have atchieved in the Courſe of the late War; which, as they reflect the higheſt Honour on this Kingdom in general, it will be meritorious to perpetuate, by ſuch a laudable Tribute of Gratitude to their Memory.

CHAP. III.

Of PERSPECTIVE.

PERSPECTIVE is the Art of delineating Objects (as they appear in Nature upon a plain Surface) according to their Diſtance and Height perpendicular to the Horizon, between the Object and the Eye.

This Art is of great Conſequence to thoſe who would excel in Drawing, Etching, Engraving, Carving in Bas-relief, or Painting; for being well underſtood, the Artiſt will be enabled to know when to adhere to the ſtrict Rules, and when to depart from them with Propriety.

Explanation *of the* Terms *uſed in* Perspective.

1. BASE or *Fundamental Line*, is the Bottom-Line of the Drawing on which the Perſon is ſuppoſed to ſtand, with his Face towards the Point of Sight.

2. *Perpendicular* is a Line drawn upright with reſpect to any Part of the Baſe.

3. *Parallel Lines* are Lines equidiſtant from each other as the Horizon to the Baſe.

4. *Horizon* is the moſt diſtant Part of a Plane, where the Clouds, ſeeming to touch the Earth, limit the Sight. The horizontal Line gives the Height of the Eye; for we cannot ſee any thing above the Horizon which does not exceed this Height: Yet the

Summit of a Mountain may be above the Horizon, though its Foot be far beneath it.

5. *Point of Sight* is that Part of the horizontal Line where all the visual Rays center in a Point.

6. *Visual Rays* are Beams of Light conveying the Likeness of any Object to the Eye or Sight, and the Knowledge thereof to the Mind or Understanding.

7. *Points of Distance* are supposed Points set off on the horizontal Line, at equal Distances on each Side the Point of Sight.

8. *Diagonal Lines* are those drawn from the Points of Distance to the Extremities of the Base Line.

9. *Abridgment of the Square* is the Line where the Diagonals intersect or cross the visual Rays, and must always run parallel to the Base. It is only made where the Sight is limited by a Perpendicular, as the farther End of a Church, Hall, Room, *&c.* And supposing a Person to stand thereon, a parallel Line drawn through the Point of Sight will seem to pass through the Eyes, and will consequently shew what Height that Person ought to be.

The Nine foregoing Definitions are illustrated in Fig. I. of the Perspective Plate.

10. *Point of direct View.* This is nothing more than the Front View of a House, Church, *&c.* or, in other Words, a Geometrical Elevation raised from a Plan or Ground-Plot, and comprehending an equal Space on both Sides of the Point of Sight. See Fig. XIV.

11. *Point of oblique View*, is when we see the Object sideways or aslant. Example: Suppose a Person was to draw a View of a Canal, with some remarkable Building he is desirous to shew more distinct, he must place himself (on the Base or Fundamental Line) opposite to that Building, that the Ray of Light may be more oblique; by which means the admired Building will be less fore-shortened, and appear to greater Advantage, the Points of Sight being still

before

before him, though not in the Middle of the Picture. See Fig. XV.

12. *Accidental Points* are those where Objects end in the horizontal Line, but neither in the Points of Sight or Distance; and serve for Streets, Houses, Chairs, Roads, *&c.* which take different Directions. As for Example: Suppose a Street leading to the Point of Sight, and from it two others branch, the one on the Right-hand, the other on the Left, and take a different Direction; these two last Streets make what we call *accidental Points*, terminating in some Part of the horizontal Line, on each Side of the Point of Sight. See Fig. XVI. The same is to be observed in a Grove, Park, *&c.* where the Walk you are in directs immediately to the Point of Sight, and the Avenues branching out on either Side terminate also in different Parts of the Horizon.

Ichnography is the Plan or Ground-Plot of any Object that is to be raised in Perspective.

Scenography is the Art of bringing any Thing raised in Perspective from an Ichnographic Plan to its due Proportion, according to the Distance in which it is placed; that all Objects may be diminished according to their Distance in a Picture, in the same Degree as they are diminished by Distance in a natural Prospect. A Scenographic View may be either direct, as in Fig. XIV. or oblique, as in Fig. XV.

AS the Art of Perspective is constructed upon Geometrical Principles, it will be necessary, previous to the Rules themselves, to learn the following introductory Operations.

1. *From a Point in a given Line* A B *to raise a Perpendicular.* See Fig. II.

Draw with the Ruler the given Line A B; then set one Foot of your Compasses in B, and extending them to rather more than Half the Length of the Line

AB, ſweep the Arch *c d*; and with the ſame Extent of Compaſſes ſet one Point in *c*, and ſweep the Arch *e f*; then, without altering the Compaſſes, ſet one Foot in *g*, and deſcribe the Arch *h i*; next rule through the Points *c g*, to interſect the Arch *h i* in *k*, and draw the Line from *k* to B, which is the Perpendicular required.

2. *Another Way.* See Fig. III.

From the Point A take the equal Diſtances AB and AC on each Side of it; then ſtretch the Compaſſes to any Diſtance greater than A B or A C, and with one Foot of them in B, ſweep the Arch *d e*; then, with the ſame Extent of the Compaſſes, ſet one Point in C, ſweep the Arch *f g*; and theſe two Arches will interſect each other in the Point *h*, from which a Line drawn to the Point A is the Perpendicular required.

3. *To draw one Line parallel (or equidiſtant) to another given Line* A B. See Fig. IV.

Extend your Compaſſes to the Diſtance of the Parallel you require; then with one Foot in any Point of the given Line, as in *c*, deſcribe the Arch *d e*. Again, without altering the Compaſſes, fix one Foot in any other Point, as in *f*, and ſweep the Arch *g h*; then rule the Line IK, touching the outward Parts of the two Arches, and that will be the Parallel to the given Line.

4. *To biſect or divide a given Line* AB *into two equal Parts.* See Fig. V.

Take with your Compaſſes any Diſtance greater than half the given Line; then, with one Foot of them in B, ſweep the Arch *c c*; and with the ſame Diſtance, ſetting one Foot in A, ſweep the Arch *d d*; and theſe Arches will interſect each other in the Points *g h*; which joined by a Perpendicular, will interſect AB in the middle Point *i*.

5. *Up*

5. *Upon the End* A *of a given Line* A B *to raiſe a Perpendicular.* See Fig. VI.

Place one Foot of the Compaſſes in A, and extend them to any Point *c* without the given Line; then ſet one Foot of them in *c*, and turn the Circle *d e* and A, and through *d c* draw the Diameter *d c e*, meeting the Circle in *e*, join A *e*, and that Right Line is the Perpendicular required.

6. *To turn the Circle though any three given Points not in a Right Line.* See Fig. VII.

Fix three Points at any Diſtance you think proper, as at A B and C, and join them by the Right Lines A B and B C; then by Fig. V. biſect the Line A B with the Line *d e*; which done, biſect the Line B C with the Line *f e*; and from the Center *e*, where theſe Lines meet, extend your Compaſſes to A, and deſcribe the Circle A B C G.

7. *To draw an Oval.* See Fig. VIII.

Draw a given Line A B, which divide into four equal Parts; ſet one Foot of the Compaſſes at C, and from that Center deſcribe a Circle *e e*; with the ſame Extent of Compaſſes place one Foot in the Center D, and turn the Circle *f f*; then, with one Foot ſtill in D, extend your Compaſſes, and turn the Arch *g g*; and with the ſame Extent, placing one Foot in C, deſcribe the Arch *h h*; join the Interſections with a Perpendicular from *i* to *k*; next, place one Foot of the Compaſſes in *i*, ſweep the Arch L L, and without altering them, ſet one Foot in *k*, and deſcribe the Arch M M.

8. *Another Method for an Oval.* See Fig. IX.

Draw a given Line A D, and with the Compaſſes extended, placing one Foot in B, with the other turn the Circle *e e*; then, without altering your Compaſſes,

on the Line A D in the ſuppoſed Point C, ſweep the Circle *f f*, and through the Points *g g*, where the two Circles interſect, draw the Perpendicular *h i*; then fix your Compaſſes with one Foot in *h*, and extend them ſo as to deſcribe the Arch *k k* to the lower Extremities of the Circle; then, with the ſame Extent, with one Foot in *i*, ſweep the Arch *l l*, to join the upper Extremities.

By theſe Examples it will appear, that an Oval of any Form or Size may be conſtructed at Pleaſure, only taking Care always to fix the Compaſſes equidiſtant from the given Line A D in the Perpendicular *h i*.

Practical Examples *in* Perspective.

1. *To draw a Square Pavement in Perſpective.* See Fig. X. and XI.

SUPPOSE your Piece of Pavement to conſiſt of 64 Pieces of Marble, each a Foot Square. Your firſt Buſineſs is, to draw an Ichnographical Plan or Ground-Plot of it, which is thus performed. Having made an exact Square of the Size you intend your Plan, divide the Baſe and Horizon into eight equal Parts, and from every Diviſion in the Baſe to its oppoſite Point in the Horizon, rule perpendicular Lines; then divide the Sides into the ſame Number, ruling parallel Lines acroſs from Point to Point: So will your Pavement be divided into 64 Square Feet; becauſe the eight Feet in Length, multiplied by the ſame in Breadth, give the Number of Square Feet or Pieces of Marble contained in the Whole: then rule Diagonals from Corner to Corner; and thus will your Ground-Plot appear as in Fig. X.

Now, to lay this in Perſpective, draw another Square to your intended Size, and divide the Baſe Line A B into eight equal Parts, as before; then fix your Point of Sight C in the Middle of the Horizon

DE

DE, and from the ſame Point rule Lines to every Diviſion in the Baſe AB; after which, rule diagona Lines from D to B, and from E to A, anſwerable to thoſe in the Ground-Plot, and your Square will be reduced to the Triangle ABC; then from the Point F, where the Diagonal DB interſects the Line AC, to the oppoſite Interſection G, where the Diagonal EA croſſes the Line CB, rule a parallel Line, which is the Abridgment of the Square.

Then through the Points where the Diagonals croſs the reſt of the Lines which go from the Baſe to the Point of Sight, rule parallel Lines, and your ſquare Pavement will be laid in Perſpective, as in Fig. XI.

2. *To find the Height and Proportion of any Objects, as they appear above the Horizon on a ſuppoſed Plane.* See Fig. XII.

Firſt rule your Horizontal Line NO, and fix your Point of Sight, as at M; then mark the Place of your neareſt Pillar, by making a Dot for the Baſe or Bottom, as at A; and another for the Summit or Top, as at B: Rule a Line from A to the Point of Sight M, and another from B to M, and theſe two Lines will give the Height of any Number of Pillars. As for Example: Suppoſe you would have a Pillar at C, fix your Dot for the Baſe, and rule from thence a parallel Line to meet the Diagonal AM at D; then rule the Perpendicular DE to the Diagonal BM; which Perpendicular is the Height of your Figure required at C. Or, if you would place Pillars at F and I, obſerve the ſame Method, ruling the Parallels FG and IK, and the Perpendiculars GH and KL wil give their Heights at the Diſtances required.

To find the Diameter or Thickneſs of Pillars at any particular Diſtances, you are alſo to be guided by that neareſt the Baſe. For Inſtance: Suppoſe your neareſt Pillar AB to be ten Feet high, and one Foot

in Diameter: divide it from Top to Bottom into ten equal Parts, and ſet off one of them upon the Baſe of the Pillar: then rule a Line from the Point of Sight M to the Diameter P, and you will have the Thickneſs of all your Pillars on their reſpective Parallels or Baſes.

3. *The ſame Rule exemplified in Objects below the Horizon.* See Fig. XIII.

If you would know the Heights of a Number of Figures below the Horizon, rule your horizontal Line QR, and fix your Point of Sight, as at P: then place your neareſt Figure, or mark the Dots for the Head and Feet, by the Points A and B, which anſwers the ſame Purpoſe; and rule from theſe Dots to the Point of Sight the Lines A P and B P: and if you would find the Height of a Figure to be drawn at *c*, rule from thence the Parallel *c d* to the Diagonal B P, and the Perpendicular *d e* will give the Height required. The ſame Directions will ſhew the Height of a Figure at any other Diſtance you have a Mind to place it, as at *f*, *i*, and *m*, by ruling the Parallels *f g*, *i k*, and *m n*; and from each of theſe their reſpective Perpendiculars *g h*, *k l*, and *n o*; which Perpendiculars will ſhew the Heights of the Figures at *f*, *i*, and *m*.

4. *To draw a direct View.* See Fig. XIV.

To illuſtrate this Example, ſuppoſe you were to draw the Inſide of a Church, as repreſented in this Figure: Firſt take your Station at the Point A, in the Center of the Baſe Line B C; from which you have a Front View of the whole Body of the Church, with all the Pillars, *&c.* on each Side: then fix your Horizon at any Height you think proper, as at D E: biſect it by the Perpendicular E A: and where theſe two Lines interſect, is the Point of Sight F. (This Perpendicular will paſs through the Centers of all the

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Arches in the Dome or Cupola: which Centers may be found by any three given Points, as in Fig. VII.) Next divide your Baſe Line into any given Number of Feet; and the viſual Lines, ruled from theſe Diviſions to the Point of Sight, will reduce all your Objects to their juſt Proportion, by ſetting off their Height upon a Perpendicular raiſed at their reſpective Diſtances. The Baſe, in the Example here given, is divided into twelve equal Parts of five Feet each; from which (ſuppoſing your Front Column to be 35 Feet high) take ſeven Diviſions from the Baſe Line of your Drawing, and ſet them off upon the Perpendicular G H; then, (ſuppoſing this Column to be five Feet thick at the Baſe,) ſet off one of thoſe Diviſions upon the Parallel I K, which is the Breadth required. So that, by proportioning the Scale to any Diſtance by the foregoing Directions, you may not only find the Dimenſions of all your Columns, but alſo of every diſtinct Part of them, as well as of all the Doors, Windows, and other Objects that occur. For Inſtance: Having found the Height and Breadth of your firſt, or neareſt Column G, draw from the Top and Bottom of the ſaid Column to the Point of Sight, the Lines H F and K F, after which, rule the Line I F from the Baſe of the Column to the Point of Sight, and you have the Heighth and Breadth of all the reſt of the Columns, as has been already ſhewn in Fig. XII.

By ruling Lines from the Points *a*, *b*, *c*, *d*, &c. to the Point of Sight, you will ſee that all the Summits and Baſes of your Columns, Doors, Windows, &c. muſt tend immediately to that Point; and by Lines drawn from the Points 1, 2, 3, 4, &c. on each Side, to the correſpondent Points on the oppoſite Side, may be ſeen all the Parts of your Building lying upon the ſame Parallel.

5. To

5. *To draw an oblique View.* See Fig. XV.

First, draw your horizontal Line A B; then, if your favourite Object be on the Left Hand, as at C, place yourself on the Right Hand upon the Baſe Line, as at D; then from that Station erect a Perpendicular D E, which will paſs through the Horizon at the Point of Sight F; to which Rule the Diagonals G F and H F, which will ſhew the Roof and Baſe of your principal Building C, and will alſo, as before directed, ſerve as a Standard for all the reſt.

Obſerve alſo, either in direct or oblique Views, whether the Proſpect before you make a Curve; for if it does, you muſt be careful to make the ſame Curve in your Drawing.

6. *To draw a Perſpective View, wherein are accidental Points.* See Fig. XVI.

Rule your horizontal Line *a b*, and on one Part of it fix your Point of Sight, as at *c*; from which rule the Diagonals *c d* and *c e* on the one Side, and *c f* and *c q* on the other; which will ſhew the Roofs and Baſes of all the Houſes in the Street directly facing you (ſuppoſing yourſelf placed at A in the Center of the Baſe Line:) Then fix your accidental Points *g* and *h* upon the horizontal Line, and rule from them to the Angles *i k* and *l m*, (where the Streets on each Side take a different Direction, towards the accidental Points *g* and *h*,) and the Lines *g i* and *g k* give the Roofs and Baſes of all the Buildings on one Side, and *l h* and *m h* do on the other.

Accidental Points ſeldom intervene where the Diſtance is ſmall, as in Noblemen's Seats, Groves, Canals, *&c.* which may be drawn by the ſtrict Rules of Perſpective; but where the Proſpect is extenſive and varied, including Mountains, Bridges, Caſtles, Rivers, Precipices, Woods, Cities, *&c.* it will require ſuch an infinite Number of accidental Points

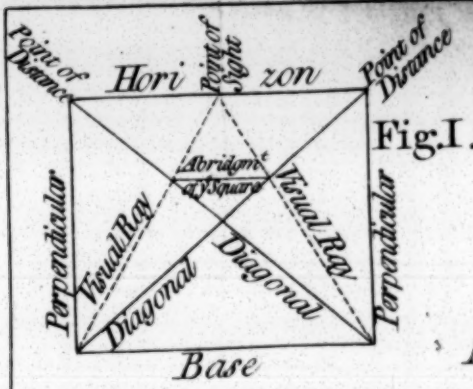

Fig.I.

Fig.II.

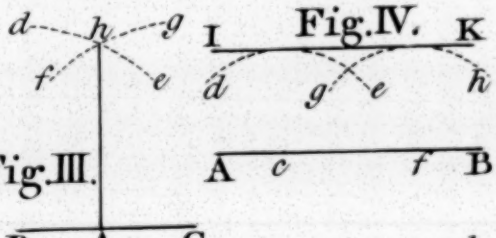

Fig.IV.

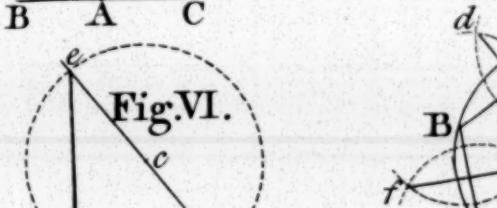

Fig.III.

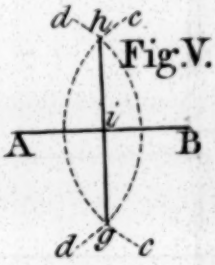

Fig.V.

Fig.VI.

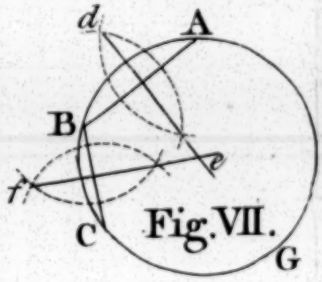

Fig.VII.

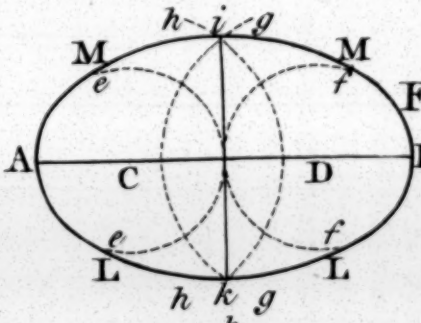

Fig.VIII.

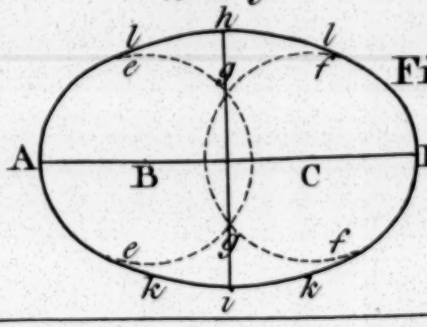

Fig.IX.

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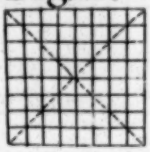
Fig.X.



Printed for Carington

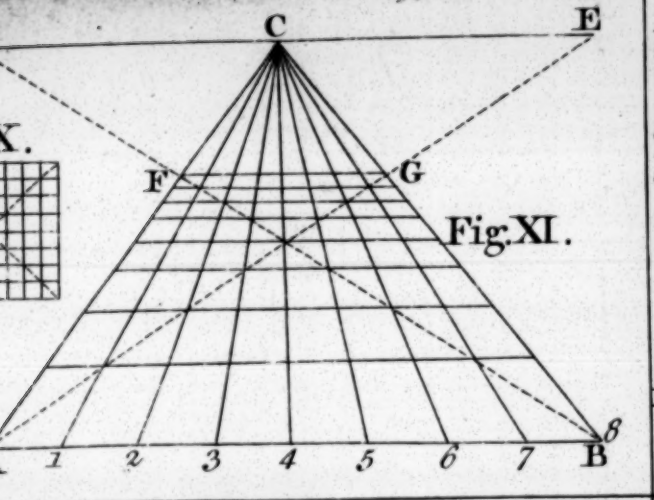


Fig.XI.

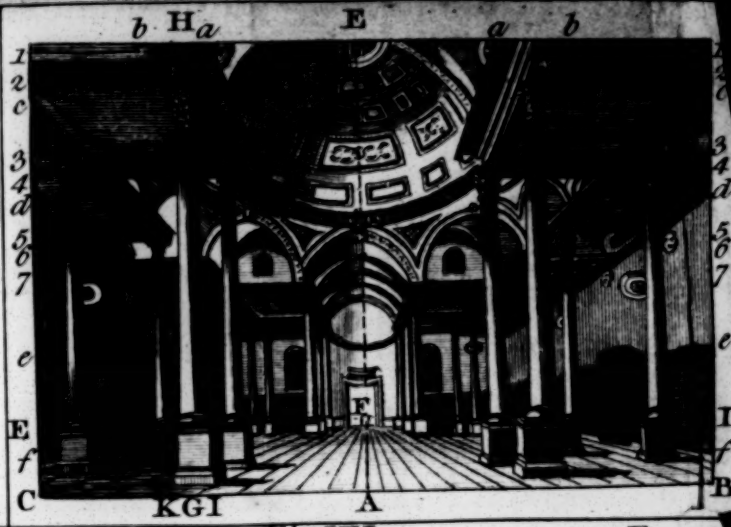


Fig.XII.

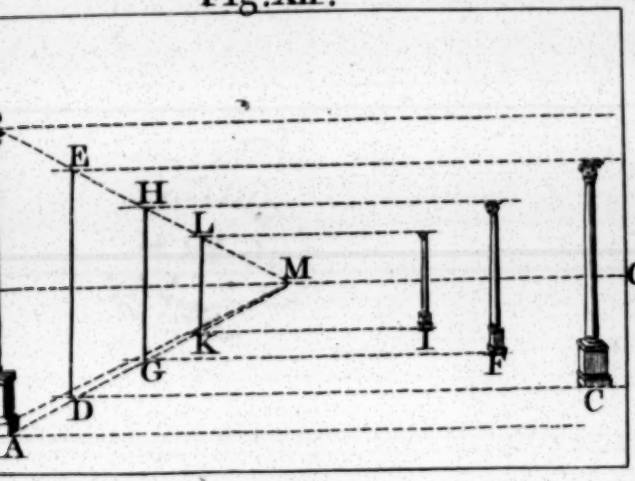


Fig.XV.

Fig.XIII.

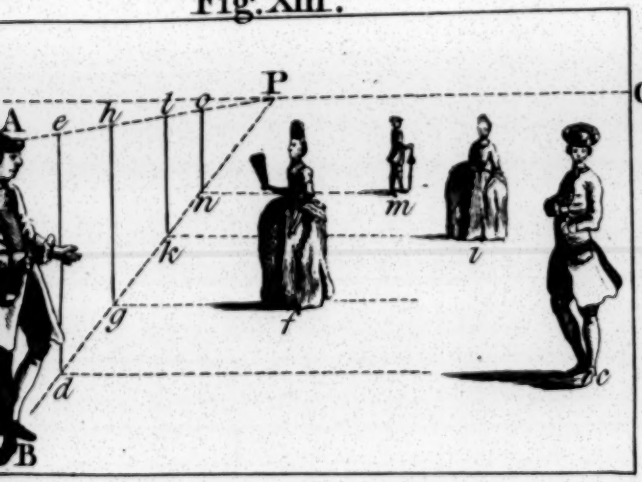
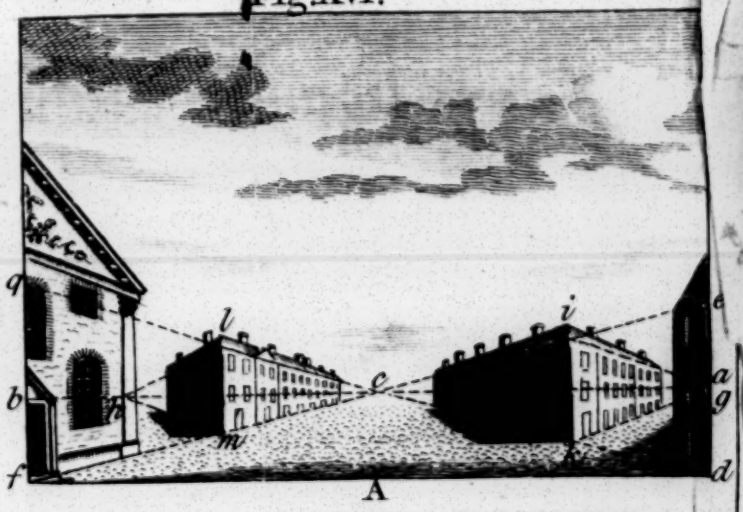


Fig.XVI.



Carington Bowles. N° 69 in S^t Paul's Church Yard, London.

FOURTH PLATE.

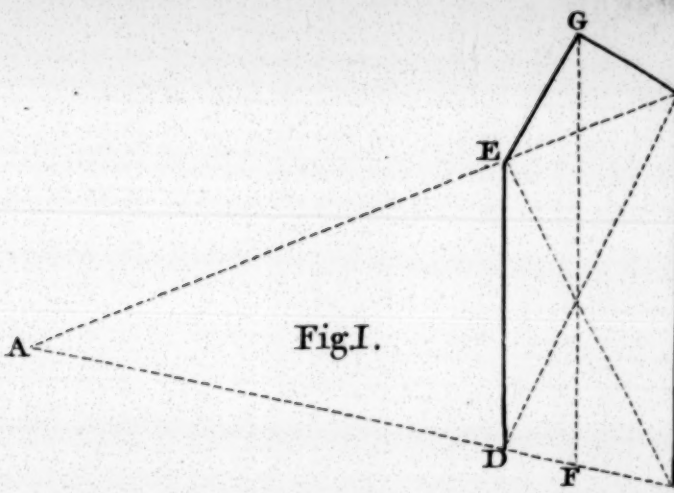


Fig.I.

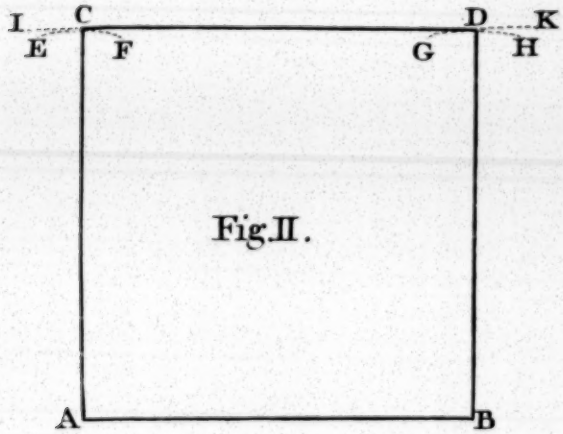


Fig.II.

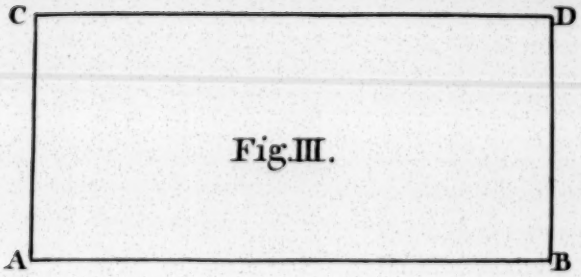


Fig.III.

Printed for Carington Bowles, N°. 69 in S.t Paul's Church Yard, Lo

that it will be better to do them as Nature ſhall dictate, and your ripened Judgment approve.

7. *To find the Center for the Roof of a Houſe, in an oblique View.* Fig. I. See Plate IV.

Suppoſe from the Point of Sight A, the viſual Lines A B and A C be drawn, B C being one Perpendicular given, and D E the other, rule the Diagonals from D to C, and from E to B, and the Perpendicular F G raiſed through the Point of their Interſection, will ſhew the true Center of the Roof, as will appear by ruling the Lines G E and G C.

For want of being acquainted with this neceſſary Rule, many who have been well verſed in other Parts of Perſpective, have ſpoiled the Look of their Picture, by drawing the Roofs of their Houſes out of their true Perpendicular.

8. *To form a Square from a Line given.* See Fig. II.

Firſt rule your Baſe Line to any Length you pleaſe, as from A to B; then raiſe Perpendiculars (as in Fig. II. Plate III.) from A to C, and from B to D; next meaſure with Compaſſes from A to B, ſetting one Point in A, turn the Arch E F; then with the ſame Extent of Compaſſes, ſet one Foot in B, and deſcribe the Arch G H: laſtly, rule from I to K, touching the outward Parts of the Arches where they interſect the Perpendiculars, and you will find the required Square.

9. *To Form a Parallelogram from a given Line.* See Fig. III.

Firſt rule a given Line the Length required, as at A B; next raiſe a Perpendicular at A, another at B, (as in Fig. II. Plate III.) and on them ſet off the proper Heights, as A C and B D; join C D with a Line, and you have the Parallelogram complete.

CHAP.

CHAP. III.

Of ETCHING.

ETCHING is a Method of working on Copper wherein the Lines or Strokes, inſtead of being cut with a Graver, are eaten with Aqua Fortis.

This Art being executed with greater Eaſe and Freedom than Engraving, repreſents curious Subjects better, and more agreeable to Nature, as Landſkips, Ruins, and ſmall faint, or remote Objects, Buildings, *&c.*

The principal Materials for this Art are the Plate, hard and ſoft Ground, (the firſt for Winter, and the other for Summer) a Dabber, Turpentine Varniſh, Lamp-Black, ſoft Wax, and Aqua-Fortis, or Spirits of Nitre.

The Tools are, an Oil Rubber, a Burniſher, a Scraper, a Hand-Vice, Etching-Boards, Etching-Needles, an Oil-Stone, and a Parallel Ruler.

The Plate may be had of any Size, and well poliſhed, fit for Uſe, of Mr. *Whittow*, in *Shoe-Lane*, *Holborn*; Mrs. *Torond*, in *Little St. Andrew's Street*, *Seven Dials*; and of Mr *Cave*, in *Weſt Smithfield*.

The Ground may be had at No. 69, *St Paul's Church-Yard*.

Directions for laying the Ground.

HAVING provided yourſelf with a Plate of the Size of the Print or Drawing you intend to copy, rub it well with an Oil-Rubber made of Swan-ſkin-Flannel, till all the Marks of the Charcoal uſed

in poliſhing It, entirely diſappear; then, wiping off the dirty Oil with a Linen Rag, dip your Finger in ſome clean Oil, and touch it over every Part of the Plate; after which, with your Burniſher poliſh the Plate, till you can ſee your Face in it: And in caſe any Sand-Holes or Flaws appear, the Scraper will aſſiſt you in taking them out. The Marks left by the Scraper are to be taken out with the Burniſher, till nothing appear. Having fixed your Hand-Vice at one End of the Plate, with a Rag and Whiting clear the Plate carefully from Greaſe; then heat it over a Charcoal-Fire, or lighted Paper, till it will melt the Ground, which is to be laid on thinly, and dabbed all over with the Dabber, till it is perfectly ſmooth and even; then warm the Plate again, and holding it up with the Ground downwards, ſmoak it all over with a large Candle, taking Care that the Snuff of it do not touch the Ground, and waving the Candle continually over every Part, ſo that the Ground may not be burnt by heating it more in one Place than another. If the Plate be large, you may bind four Penny-Candles together.

Directions for Tracing.

THE firſt Thing to be done, (while the Plate is cooling, after the Ground is laid) is to rub the Back of your Print or Drawing all over with a Bit of Rag or Cotton, dipt in the Scrapings of red or white Chalk, and ſhake off the looſe dirt, or wipe it off gently with a clean Rag. Place the Red Side upon the Plate, making it faſt at each Corner with a little Bit of ſoft Wax. Lay your Etching-Board under your Hand, to prevent bruiſing the Ground; then with a blunt Etching-Needle trace lightly the Outlines and Breadths of the Shadows, till the Marks of them

them appear upon the Ground, which you muſt take Care not to penetrate by tracing too hard.

As great Nicety is required in this Part of your Work, it will be neceſſary now and then to lift up one Corner of your Original, and examine whether every Part be traced before you take it off, as it will be extremely difficult to lay it down again in its former Poſition.

Directions for Etching.

HAVING carefully traced your Original, take it off, and lay a Silk or Linen Handkerchief next the Plate, and over that your Etching-Board; then proceed to the Etching, for which obſerve the following Directions, which are adapted to every particular Branch, as Landſkips, Shipping, Portraits, Hiſtory, Architecture, *&c.*

Diſtances in Landſkips, or the faint Parts of any other Picture, are the firſt to be done; and theſe are to be worked cloſer, and with a ſharper-pointed Needle: The darker Parts muſt be etched wider, and with a blunter Needle; but, to prevent Miſtakes, the Needles may be marked according to their different Degrees, and the Uſes for which they are intended. As for the very fainteſt Parts of all, they are to be left for the Graver, or dry Point; of which hereafter.

In Building, and all Architecture in general, uſe a Parallel Ruler, till frequent Practice enables you to do them well enough without.

The Needles may, when neceſſary, be whetted upon your Oil-Stone, keeping them turning in your Hand, ſo as to whet them equally all round. The Oil-Stone will be farther uſeful in whetting the Scraper, which is to be rubbed flat upon the Stone, and with

with a ſteady hand, keeping Oil conſtantly upon the Stone.

Of Biting or Eating-in the Work with Aqua Fortis.

FIRST examine your Work carefully, to ſee that nothing be omitted; and if any Scratches appear upon the Ground, or Miſtakes be committed in the Etching, they are to be ſtopped out, which is done by covering them with a Mixture of Lamp-Black and Turpentine-Varniſh, laid on thinly with a Hair-Pencil, which, when dry, will reſiſt the Aqua-Fortis But it will be beſt to ſtop out theſe as they occur to you in the Courſe of your Work, for by this Means they will be leſs liable to eſcape your Notice; and when the Varniſh is dry, you may etch over it again, if required.

The next Thing is, to encloſe the Work with a Rim or Border of ſoft green, or other coloured Wax, about half an Inch high, bending the Wax in the Form of a Spot at one Corner, to pour off the Aqua-Fortis: And that it may not run out at any other Part, take Care to lay your Wax ſo cloſe to the Plate, that no Vacancies be left.

Your Aqua-Fortis muſt be ſingle; and if too ſtrong, as will be ſeen in the Biting, take it off, and mix it with a little Water, ſhaking them together in a Bottle; and when it is too weak, it may be ſtrengthened by mixing it in a Bottle with a little double Aqua-Fortis. The Bottle which contains the Aqua-Fortis ſhould have a large Mouth, and a Glaſs Stopple.

Let the Aqua-Fortis lie on the Plate a ſhort Time, wiping off the Bubbles, as they ariſe, with a Feather, which may remain upon the Plate while it is biting; after which, take it off, and waſh the Plate with Water; then let it dry, and by ſcraping off Part of the Ground

Ground from the faintest Part of the Work, try if it be bit enough; and if not, stop out the Part you have tried with the Lamp-Black and Varnish; and when that is dry, pour on the Aqua-Fortis again.

When the faint Parts of your Work are bit enough, stop them out, and proceed to bite the stronger Parts, stopping them out as Occasion requires, till the whole Work is sufficiently bit: Then warm the Plate and take off the soft Wax; after which, heat the Plate till the Ground melts, pour on a little Oil, and wipe the whole off with a Rag. When the Ground is taken off, rub the Work well with the Oil-Rubber, and wipe the Plate clean; then proceed to finish it with the Graver, according to the following Directions.

CHAP.

CHAP. IV.

Of ENGRAVING.

THE Tools neceſſary for Engraving are, the Oil-Rubber, Burniſher, Scraper, Oil Stone, Needles, and Ruler, already mentioned to be uſed in Etching; alſo Gravers, Compaſſes, and a Sand-Bag.

Gravers are of two Sorts, ſquare and lozenge: Three of each Sort ſhould be provided. The firſt is uſed in cutting the broader Strokes, the other for the fainter and more delicate; and both Sorts may be had at No. 69, in St. *Paul's Church-Yard*. No Graver ſhould exceed the Length of Five Inches and a Half, the Handle included, excepting for ſtrait Lines.

The Sand-Bag, or Cuſhion, is uſed to lay the Plate on, for the Conveniency of turning it about, and may be had at the *White Lion*, in *Foſter-Lane*; as may likewiſe the Oil-Stone, which muſt be of the *Turkey* Sort.

Of Whetting and Tempering the Graver.

AS great Pains are required to whet the Graver nicely, particularly the Belly of it, Care muſt be taken to lay the two Angles of the Graver, which are to be held next the Plate, flat upon the Stone, and rub them ſteadily till they are poliſhed like a Mirror, and till the Belly riſes *gradually above the Plate*, ſo as that, when you lay the Graver flat upon it, you

may juſt perceive the Light under the Point; otherwiſe it will dig into the Copper, and it will be impoſſible to keep a Point, or execute the Work with Freedom. In order to this, keep your Right Arm cloſe to your Side, and place the Fore-Finger of your Left Hand upon that Part of the Graver which lies uppermoſt on the Stone. When this is done, in order to whet the Face, place the flat Part of the Handle in the Hollow of your Hand, with the Belly of the Graver upwards, upon a moderate Slope, and rub the Extremity or Face upon the Stone, till it has an exceeding ſharp Point, which you may try upon your Thumb-Nail. The Oil-Stone, while in Uſe, muſt never be kept without Oil.

When the Graver is too hard, as is uſually the Caſe when firſt bought, and may be known by the frequent breaking of the Point, the Method of tempering the Steel is as follows:

Heat a Poker red-hot, and hold the Graver upon it within Half an Inch of the Point, waving it to and fro till the Steel changes to a light Straw-Colour; then put the Point into Oil to cool: Or, hold the Graver cloſe to the Flame of a Candle, till it be of the ſame Colour, and cool it in the Tallow: But be careful either Way not to hold it too long, for then it will be too ſoft; and in this Caſe the Point, which will then turn blue, muſt be broken off, and whetted afreſh, and temper d again, if required. But be not too haſty in tempering; for ſometimes a little whetting will bring it to a good Condition.

Of Holding the Graver.

CUT off that Part of the Handle which is upon the ſame Line with the Belly, or ſharp Edge of the Graver, making that Side flat, that it may be no Obſtruction.

Hold

Hold the Handle in the Hollow of your Hand; and extending your Fore-Finger towards the Point, let it reſt upon the Back of the Graver, that you may guide it flat, and parallel with the Plate.

Take Care that your Fingers do not interpoſe between the Plate and the Graver; for they will prevent you from carrying the Graver level with the Plate, and from cutting your Strokes ſo clean as they ought to be.

Directions for Engraving.

LET the Table or Board you work at be firm and ſteady; upon which place your Sand-Bag with the Plate upon it; and holding the Graver as above directed, proceed to Buſineſs in the following Manner;

For ſtrait Strokes, hold your Plate firm upon the Sand-Bag with your Left Hand, moving your Right Hand forwards; leaning lighter where the Stroke ſhould be fine, and harder where you would have it broader.

For circular or crooked Strokes, hold the Graver ſtedfaſt, moving your Hand, or the Plate, as you ſee convenient.

Learn to carry your Hand with ſuch a Slight, that you may end your Stroke as finely as you began it; and if you have Occaſion to make one Part deeper or blacker than another, do it by Degrees: And that you may do it with greater Exactneſs, take Care that your Strokes be not too cloſe, nor too wide.

In the Courſe of your Work, ſcrape off the Barb or Roughneſs which ariſes, with the Belly of your Graver; but be careful, in doing this, not to ſcratch the Plate: And that you may ſee your Work properly as you go on, rub it with the Oil-Rubber, and

wipe the Plate clean, which will take off the Glare of the Copper, and ſhew what you have done to the beſt Advantage.

Any Miſtakes or Scratches in the Plate may be rubbed out with the Burniſher, and the Part levelled with the Scraper, poliſhing it again afterwards lightly with the Burniſher.

Having thus attained the Uſe of the Graver, according to the foregoing Rules, you will be able to finiſh the Piece you had etched, by graving up the ſeveral Parts to the Colour of the Original; beginning, as in the Etching, with the fainter Parts, and advancing gradually with the ſtronger, till the whole is completed.

The dry Point (ſo called becauſe not uſed till the Ground is taken off the Plate) is principally employed in the extreme light Parts of Water, Sky, Drapery, Architecture, *&c.*

For your firſt Practice, copy ſuch Prints as are openly ſhaded; the more finiſhed ones being too difficult, till you have gained farther Experience.

Great Choice of Prints of every Kind, fit for young Beginners, may be had where this Book is publiſhed.

N. B. To prevent any Obſtruction from too great a Degree of Light, we would recommend the Uſe of a Saſh, made of tranſparent or Fan-Paper paſted on a Frame, and placed ſloping at a convenient Diſtance between your Work and the Light. This will not only preſerve the Sight, but, when the Sun ſhines, cannot poſſibly be diſpenſed with.

CHAP. V.

Of MEZZOTINTO-SCRAPING.

THIS Art, which is of late Date, is recommended to the Practice of the ingenious Reader, for the amazing Eaſe with which it is executed, eſpecially by thoſe who have any Notion of Drawing.

Mezzotinto Prints are thoſe which have no Hatching or Strokes of the Graver, but whoſe Lights and Shades are blended together, and appear like a Drawing of *Indian* Ink.

The Tools uſed in this Art are,

The Copper-Plate, Oil-Stone, Grounding-Tools, Scrapers, Burniſher and Needles; all which, excepting the Plate and Oil-Stone, may be had at No. 69, in St. *Paul's Church-Yard.*

Directions for Laying the Mezzotinto-Ground.

MARK off upon the Bottom of the Plate the Diſtance you intend to leave for the Writing, Coat of Arms, *&c.* then, laying your Plate with a Piece of Swanſkin-Flannel under it upon your Table, hold the Grounding-Tool in your Hand perpendicularly, lean upon it moderately hard, continually rocking your Hand in a Right Line from End to End, till you have wholly covered the Plate in one Direction: Next, croſs the Strokes from Side to Side, afterwards

from Corner to Corner, working the Tool each Time all over the Plate, in every Direction, almoſt like the Points of a Compaſs; taking all poſſible Care not to let the Tool cut (in one Direction) twice in a Place. This done, the Plate will be full, or, in other Words, all over rough alike, and would, if it were printed, appear completely black.

Having laid the Ground, take the Scrapings of Black Chalk, and with a Piece of Rag rub it over the Plate; or you may, with two or three Candles, ſmoke it, as before directed for Etching.

Now, take your Print or Drawing, and having rubbed the Back with Red-Chalk Duſt, mixed with White Lake, proceed to trace it, as directed, Page 29.

Directions for Whetting the Grounding-Tool.

IF a Tooth of the Tool ſhould break, it may be perceived in the Working by a particular Streak or Gap, which will appear in the Ground in a ſtrait Line; in which Caſe the Tool muſt be whetted on the Back, holding it ſloping, and in a circular Manner, like the Bottom of the Tool.

Directions for Scraping the Picture.

TAKE a blunt Needle, and mark the Outlines only; then with a Scraper ſcrape off the Lights in every Part of the Plate, as clean and ſmooth as poſſible, in proportion to the Strength of the Lights in your Picture, taking Care not to hurt your Outlines; And that you may the better ſee what you do, with the Thumb and Fore-Finger of the Left-Hand hold a Piece of tranſparent Paper, ſloping, juſt over your Right-Hand, and you will ſoon be a Judge of the different

ferent Tints of the Work you are doing; ſcraping off more or leſs of the Ground, as the different Strengths of Light and Tints require.

The Uſe of the Burniſher is, to ſoften or rub down the extreme light Parts after the Scraper is done with, ſuch as the Tip of the Noſe, Forehead, Linen, *&c.* which might otherwiſe, when proved, appear rather miſty than clear.

Another Method uſed by Mezzotinto-Scrapers, is to etch the Outlines of the Original, as alſo of the Folds in Drapery, marking the Breadth of the Shadows by Dots, which having bit of a proper Colour with Aqua Fortis, according to the Directions given Page 31 and 32, take off the Ground uſed in etching, and having laid the Mezzotinto-Ground as in Page 37, proceed to ſcrape the Picture as above.

Four or five Days before you think the Plate will be ready for proving, Notice muſt be given to the Rolling-Preſs Printer, (by applying at 69, in St. *Paul's Church-Yard,*) to wet ſome *French* Paper, as no other will do for printing them, and as that Time is neceſſary for it to lie in wet. When the Proof is dry, touch it with White Chalk where it ſhould be lighter, and with Black Chalk where it ſhould be darker; and when the Print is retouched, proceed as before for the Lights, and for the Shades uſe a ſmall Grounding-Tool, as much as you judge neceſſary to bring it to the proper Colour; and when you have done as much as you think expedient, prove it again, and ſo proceed to prove and touch, till it is entirely to your Mind. When the Plate tarniſhes in the Part where you are at Work, a little Vinegar and Salt kept by you in a Vial will take it off, wiping it dry with a clean Rag.

Avoid as much as poſſible over-ſcraping any Part before the firſt Proving, as by this Caution the Work will appear the more elegant.

CHAP.

CHAP. VI.

Of PAINTING upon GLASS.

PAINTING upon Glass is an Art which has generally appeared difficult; yet there is no Repreſentation can be more elegant than that of a Picture done well in this Manner: for it gives all the Softneſs that can be deſired in a Picture, and is eaſy to work; as there are no Outlines to draw, nor any Shade to make, but the Colours are put on without the Trouble of either.

The Pictures are thoſe done in Mezzotinto; for their Shades being rubbed down on the Glaſs, the ſeveral Lines which repreſent the ſhady Part of any common Print, are by this Means blended together, and appear as ſoft and united as in any Drawing of *Indian* Ink.

Provide ſuch Mezzotintos as you like; cut off the Margin; then get a Piece of fine Crown-Glaſs, the Size of your Print, (as flat and free from Knots or Scratches as poſſible); clean the Glaſs, and lay ſome *Venice* Turpentine, quite thin and ſmooth, on one Side thereof, with a Bruſh of Hog's Hair. Lay the Print flat in Water, and let it remain on the Surface till it ſinks; 'tis then enough: Take it carefully out, and dab it between ſome Papers, that no Water may be ſeen, yet ſo as to be damp.

Next, lay the damp Print, with its Face uppermoſt, upon a flat Table; then, holding the Glaſs over it, without touching the Turpentine till it is exactly

exactly even with the Print, let it fall gently on it. Preſs the Glaſs down carefully with your Fingers in ſeveral Parts, ſo that the Turpentine may ſtick to the Print; after which, take it up; then, holding the Glaſs towards you, preſs the Print with your Fingers, from the Center towards the Edges, till there be no Bliſters remaining.

When this is done, wet the Back of your Print with a Spunge, till the Paper will rub off with your Fingers; then rub it gently, and the white Paper will roll off, leaving the Impreſſion only upon the Glaſs: Then let it dry, and with a Camels-Hair Pencil, dipt in Oil of Turpentine, wet it all over, and it will be perfectly tranſparent, and fit for painting.

Colours proper for Painting upon Glaſs.

THE ſeveral Sorts of Colours ground in Oil for this Purpoſe, and tied up in little Bladders, may be had of Mr. *Dicker*, oppoſite *Newport-Market*, and Mr. *Drake*, or Mr. *Sandys*, in *Long-Acre*, whoſe Buſineſs it is (diſtinct from that of other Colourmen) to prepare the finer Colours for Limners.

Whites.
Flake White.
Spodium.

Blacks.
Lamp-Black.
Ivory-Black.

Browns.
Spaniſh Brown.
Umber.

Reds.
Roſe Pink.
Vermilion.
Red Lead.
Indian Red.
Native Cinnabar.

Yellows.
Engliſh Pink.
Maſticot.
Engliſh Oker.

Spruce

Spruce Oker.
Dutch Pink.
Orpiment.

Saunders Blue.
Smalt.
Indico.

Blues.
Blue-Bice.
Pruſſian Blue.

Greens.
Verdigreaſe.
Terra Vert.
Verditer.

The Ultramarine (for Blue), and the Carmine (for Red), are rather to be bought in Powders, as in that Caſe they are leſs apt to dry, or be loſt: And as the leaſt Touch of theſe will give the Picture a Caſt, mix up what you want for preſent Uſe with a Drop or two of Nut-Oil upon your Pallet, with your Pallet-Knife.

The Pallets may be had at the Colour-Shops above mentioned: The Pallet-Knives are ſold at Mr. *Burchell's*, Cutler, in *Long-Acre*.

To get the Colour out of the Bladders, prick a Hole at the Bottom of each, and preſs it till you have enough upon your Pallet for preſent Uſe; becauſe the Colours are apt to dry and ſkin over.

Then lay a Sheet of White Paper on the Table, and taking the Picture in your Left-Hand, with the Turpentine Side next you, hold it ſloping (the Bottom reſting on the White Paper), and all the Outlines and Tints of the Print will be ſeen on the Glaſs; and nothing remains but to lay on the Colours proper for the different Parts, as follows:

The Method of Uſing the Colours.

AS the Lights and Shades of your Picture open, lay the lighter Colours firſt on the lighter Parts of your Print, and the darker over the ſhaded Parts; and having once laid on the brighter Colours, it is not material if the darker Sorts are laid a little over them; for

for the firſt Colour will hide thoſe laid on afterwards. As for Example.

Reds.

Lay on firſt the Red Lead, and ſhade with Lake or Carmine.

Yellows.

The lighteſt Yellow laid on firſt, may be ſhaded with *Dutch* Pink.

Blues.

Blue-Bice or Ultramarine, uſed for the Lights, may be ſhaded with Indigo.

Greens.

Lay on Verdigreaſe firſt, and then a Mixture of that and *Dutch* Pink. This Green may be lightened by an Addition of *Dutch* Pink.

When any of theſe Colours are too ſtrong, they may be lightened to any Degree, by mixing White with them upon your Pallet; or you may darken them as much as you pleaſe, by mixing them with a deeper Shade of the ſame Colour.

The Colours muſt not be laid on too thick; but if troubleſome, thin them before you uſe them, with a little Turpentine-Oil.

Take Care to have a Pencil for each Colour; and never uſe that which you have uſed for Green with any other Colour, without firſt waſhing it well with Turpentine-Oil, as that Colour is apt to appear predominant when the Colours are dry.

Waſh all the Pencils after uſing in Turpentine-Oil.

Your Glaſs, when painted, muſt ſtand three or four Days free from Duſt, before it be framed.

All Sorts of Mezzotinto and other Prints proper for painting on Glaſs, may be had at the Place where this Book is publiſhed.

CHAP.

CHAP. VII.

OF PAINTING IN CRAYONS.

CRAYONS are to be had in Boxes, every Colour partitioned off ſeparately, to prevent mixing.

The beſt are thoſe of *Switzerland*.

The different Colours are White, Black, Yellow, Orange, Red, Purple, Blue, Green, and Brown; and each of theſe have their ſeveral Shades, excepting the two firſt.

Directions for uſing them.

THE Paper to be uſed on this Occaſion is rough *Venice* Paper, of a whited-brown Colour, and the ſtiffer the better. That Sort called *Cape-Paper* is found to be the beſt, becauſe upon that the Colours beſt diſtribute themſelves. By this Method Figures may be draw in their proper Colours as they appear to the Eye, becauſe the Colours may be matched with the Crayons, and the Crayons being dry, will not alter their Colour; but the Colours, when wet, appear deeper than when they are dry, which is apt to deceive a young Beginner.

Another Way to make the neceſſary Preparations, is to take ſome of the thickeſt and ſmootheſt light Blue or other Paper, and get a Straining-Frame from a Frame-Maker's or Carpenter's, on which ſtrain ſome coarſe

coarſe *Scotch* or *Iriſh* Cloth, drawing and faſtening it with ſmall Tacks round the Edges, till it be quite ſmooth; after which, with a Spunge and fair Water gently wet the Blue Paper, and then with a Bruſh or Rag paſte the Paper all over, and lay it carefully on the Cloth, exactly even with the Straining-Frame: after which take it up, and laying White Paper on the Table, place the Blue Paper downwards; with one Hand keep the Straining-Frame ſteady, and with the other rub the Cloth cloſe to the Paper: Do this very carefully; and taking it up, lay it on the Table with the Blue Paper upwards, and a Piece of Paper under your Hand, and rub it cloſe to the Straining-Frame, without touching any other Part; then let it ſtand to dry: after which, ſet it on an Eaſal, (which may be had at the Colour-Shops) and proceed as follows:

Make the firſt Sketch or Rough-draught with Charcoal; then with Black, White, or Red Chalk, correct what you ſee amiſs. The Outline being thus completed, rub in your Crayons according to their proper Colours, and then with your Finger or Fitch ſoften and blend them together.

CHAP. VIII.

OF PAINTING IN WATER-COLOURS.

THE Materials neceſſary for this Art are Gum, Colours, Hair-Pencils, Fitches, a Pallet and Pen-Knife.

The Colours in general are White, Black, Brown, Red, Yellow, Blue, and Green.

The ſeveral Species of each are as follow:

Whites.
Ceruſe.
Flake White.
Spaniſh White.
Spodium.
White Lead.
Conſtant White.

Blacks.
Burnt Cherry-Stones.
Ivory Black.
Lamp-Black.
Keating's Black.

Browns.
Spaniſh Brown.
Spaniſh Liquorice.
Umber.
Biſtre.

Reds.
Burnt Oker.
Carmine.
Cinnabar-Lake.
Minium.
Indian Lake.
Indian Red.
Red Ink.
Red Lead.
Vermilion.

Yellows.
Engliſh Oker.
Gall-Stone.
Gamboge.
Maſticot, dark and light.
Oker de Luce.
Orpiment.
Dutch Pink, dark and light.
Roman Oker.
Saffron.

Blues.
Bice.
Verditer.
Sanders Blue.

Blues.

Blues.	*Greens.*
Pruſſian Blue, dark and light.	Bice.
Indico.	Green Pink.
Litmoſe.	Sap-Green.
Smalt.	Verdigreaſe.
Ultramarine.	Verditer.

Moſt of theſe Colours may be had ready prepared in Shells, or Lumps, as alſo the Hair-Pencils, at N°. 69, in St. *Paul's Church Yard.* If you uſe the latter, a Grind-Stone and Muller muſt be provided, which are to be of Pebble, and may be had at any Stone-Cutters.

Directions for making the following mixed Colours.

Aſh Colour. WHITE and Lamp-Black; or Indico and Black; or Cherry-Stone and White, ſhaded with Ivory-Black.

Bay Colour. Vermilion, with a little *Spaniſh* Brown and Black.

Bright Red. *Indian* Lake and Native Cinnabar.

Carnation. Lake and White, ſhaded with Lake.

Changeable Silk. Red Lead and Water of Maſticot, ſhaded with Sap-Green.

Cloud Colour. White, Light Maſticot; or Lake and White ſhaded with Blue Verditer; or Blue Verditer alone.

Crimſon. Cinnabar-Lake and White, ſhaded with Lake.

Flame Colour. Vermilion and Orpiment; or Red Lead and Maſticot, heightened with White.

Fleſh

Fleſh Colour.	White, with a little Lake, and Red Lead; add Yellow Oker for a ſwarthy Complexion.
French *Green.*	Light Pink and *Dutch* Bice, ſhaded with Green Pink.
Glaſs Grey.	Ceruſe, with a little Blue of any kind.
Hair Colour.	Maſticot, Umber, Yellow Oker, Ceruſe, Oker-de-Luce, and Cherry-Stone Black.
Lead Colour.	Indico and White.
Light Blue.	Blue Bice, heightened with Ceruſe or Spodium.
Light Green.	Pink and Smalt, with White, if Need require.
Lyon-Tawney.	Red Lead and Maſticot, ſhaded with Umber.
Murry.	Cinnabar-Lake and White Lead.
Orange.	Red Lead and a little fine Maſticot, ſhaded with Gall-ſtone and Lake.
Orange Tawney.	Cinnabar, light Pink and a little Maſticot, ſhaded with Gall-ſtone and Lake.
Pearl Colour.	Carmine, with a little White, ſhaded with Lake.
Popinjay Green.	Green and Maſticot; or Pink and a little Indico, ſhaded with Indico.
Purple.	Indico, *Spaniſh* Brown and White; or Blue Bice with Red and White Lead; or Blue Bice and Lake.
Ruſſet.	Cherry-Stone Black and White.
Scarlet.	Red Lead and Lake, with or without Vermilion; or Carmine and *Indian* Lake; or Native Cinnabar and Red Lead ſhaded with *Indian* Lake.

Sea-

Sea Green. Bice, Pink and White, ſhaded with Green Pink.

Sky-Colour. Light Maſticot and White, for the loweſt and lighteſt Parts; Red Ink and White for the next; Blue Bice and White for a third Degree; and Blue Bice alone for the higheſt Part of all. Theſe are to be all ſoftened into one another at the Edges, ſo as not to appear harſh.

Sky-Colour for Drapery. Blue Bice, and *Venice* Ceruſe; or Ultramarine and White, ſhaded with Indico.

Straw-Colour. Yellow Maſticot, and a very little Cinnabar, ſhaded with dark Pink.

Violet-Colour. Indico, White and Cinnabar Lake; or fine *Dutch* Bice and Lake, ſhaded with Indico; or Litmoſe, Smalt, and Blue Bice; the latter moſt predominant.

Water. Blue and White ſhaded with Blue, and heightened with White.

Directions for uſing the Colours.

YOUR Pencils muſt be faſt in their Quills, and ſharp-pointed after you have drawn them through your Mouth.

Before you begin, have all your Colours ready before you, and a Pallet for the Conveniency of mixing them; a Paper to lay under your Hand, and to keep your Work clean, as well as to try your Colours upon; alſo a large Bruſh called a Fitch, to wipe off the Duſt when your Colours are dry.

Lay your Colours on but thinly at firſt, deepening and mellowing them by degrees as you ſee occaſion. The quicker you lay them on, the evener and cleaner your Drawing will appear.

Take care to preſerve all your Colours from Duſt; and before you uſe them wipe your Shells and Pallet every Time with a Fitch.

When you have done your Work, or would lay it aſide, be careful to waſh out your Pencils in warm Water.

For Face-Painting, mix up a little light Carnation or Fleſh-Colour, with Gum-Water, in a Shell by itſelf. If it be for a fair Complexion, mix Vermilion and White Flake together; and for a ſwarthy one, add to the former a little Maſticot or *Engliſh* Oker, or both.

Let your Fleſh-Colour be always lighter than the Complexion you would paint; for by working on it, you may bring it to its true Colour.

In a large Shell, or upon your Pallet, lay your different Shades of Fleſh-Colour at a convenient Diſtance from each other; and always have ready a ſufficient Quantity of White to lighten your Shadows.

For the Cheeks and Lips uſe a Mixture of Lake and Red Lead, or Carmine, as Occaſion requires; and for blue Tints, (as under the Eyes and in Veins) Indico or Ultramarine and White.

For grey faint Shadows, uſe White, *Engliſh* Oker, ſometimes Maſticot: For deep Shadows, White, *Engliſh* Oker, Umber; for darker Shadows, Lake and Pink, which make a good fleſhy Shadow.

In colouring Landſkips, at firſt only lay dead Colours ſmooth all over the Piece, leaving no Part uncovered; and be not over-curious in this Part of the Performance, but rather uſe a maſterly Freedom; and the Work, though ſeemingly rough to the Eye, will have a good Effect when placed at a Diſtance.

Let

Let not the Roughneſs of the Colour diſcourage you; for it is eaſily to be ſoftened by Degrees with the other Shadows, obſerving only to ſweeten and heighten them according as the Light falls.

In ſome Places lay on ſtrong Touches, and in thoſe Places bring your Work up together to an equal Roundneſs and Strength; tempering and ſweetening your Colours with a ſharper Pencil than the firſt, that no Lumps or harſh Edges be left, but that all your Shadows may lie diſperſed, ſoft and ſmooth, gliding gently, as it were, into one another.

You are not to finiſh any Part before the other, but work up all the Parts gradually alike, till you ſee nothing wanting to complete your Picture.

Having laid your dead Colours, begin firſt with the lighteſt Parts, as the Sky, Sun-beams, *&c.* then the yellowiſh beams (which are to be done with Maſticot and White); next the Blueneſs of the Sky (with Ultramarine or Smalt alone). For Purple Clouds only, mix Lake and White, making your Colours deeper as they go upwards from the Horizon, except in tempeſtuous Skies. The Tops of diſtant Mountains muſt be worked ſo faint, that they may ſeem to loſe themſelves in the Air.

Bring your Colours forwards, as your Diſtance decreaſes; painting your firſt Ground next the Horizon downwards of a blueiſh Sea-Green, and as you advance forwards, of a reddiſh or darker Green, till you come to the Fore-Ground itſelf, which as it is to be the darkeſt Part of all, do with dark Green, ſhaded with a dark Brown or Yellow; which Rule of Shadow will alſo ſerve for the Trees on each reſpective Ground.

All diſtant Objects are to be made imperfect as they appear to the Eye, as has been already obſerved under the Article of *Light and Shade*.

In colouring Trees, Boughs, and Branches, touch in all the dark Shades firſt, raiſing the lighter Leaves above the darker by adding Maſticot to the dark Green, which may be made with Bice, Pink, and Indico, for the uppermoſt of all, which are to be done laſt; touch lightly the Extremities of the Leaves with a little Green, Maſticot, and White, and ſet off the darkeſt Shadows with Sap-Green and Indico.

Theſe Rules are adapted to general Appearances; but the Learner may deviate from them as Nature ſhall dictate.

With Regard to Drapery, Fruit, Flowers, and other Branches of Painting, the beſt Obſervations are to be taken from the Objects themſelves, or the moſt curious and exact Repreſentations of them.

Receipts for thoſe who paint in Water-Colours.

To make Gum-Water.

DISSOLVE one Ounce of pure white Gum-Arabic, and half an Ounce of Double-refined Sugar, in a Quart of Spring-Water; ſtrain it through a fine Sieve or a Piece of Muſlin, and bottle it off for Uſe, keeping it free from Duſt.

Another Way.

Take ſome Gum-Arabic of the whiteſt Sort, bruiſe it, and tie it up in a Piece of Woollen Cloth, and ſteep it in Spring-Water in a Glaſs or Earthen Veſſel, till it be diſſolved. If it be too ſtiff, add more Water; and if too thin, more Gum.

With this Water you may temper moſt of your Colours; uſing ſuch a Quantity, that being touched when dry, the Colour will not come off. If the Colour ſhines, there is too much Gum in it.

To

To keep the Flies from your Work.

When you have made your Gum-Water according to either of the foregoing Directions, add thereto a little Coloquintida, which will preſerve your Work, when expoſed, from being ſpoiled by the Flies.

To make Liquid Gold for Vellum-Painting, Fans, &c.

Grind the fineſt Leaf-Gold with ſtrong Gum-Water very fine, adding as you grind it more Gum-Water as you ſee neceſſary. When you have ground it as fine as you can, waſh it in a large Shell; then temper it with a little Mercury-ſublimate, bind it in the Shell with a little diſſolved Gum, ſhake and ſpread it equally all over the Shell, and uſe it with fair Water only.

To make Liquid Silver for the ſame Purpoſe.

The Proceſs for this is the ſame with that of Liquid Gold, only obſerving in the uſing it to temper it with Glair of Eggs inſtead of Water.

To make the Glair of Eggs.

Take the Whites, and beat them with a Spoon till they riſe all in a Foam; let them ſtand all Night, and they will be clarified into good Glair.

To recover Liquid Silver that has contracted Ruſt.

If your Silver, by Length of Time or damp Weather, become ruſty, cover that Part of your Work with Juice of Garlick, which will effectually recover it.

To keep the Colours from ſinking.

Boil four Ounces of Roch-Allum in a Pint of Spring-Water, till it is throughly diſſolved; then filter it through brown Paper, and keep it for Uſe.

Before

Before you lay on your Colours, take a Spunge, and wet the Back of your Paper with this Water while it is hot. This will not only prevent the Colours from ſinking, but will likewiſe give them an additional Beauty and Luſtre, and preſerve them from fading. If your Paper is not good, it muſt be waſhed three or four Times with this Water, drying it every Time.

If your Prints are to be varniſhed, waſh them all over with White Starch before you begin to lay on your Colours.

To make Size for painting Scenes, and other Candle-Light Pieces.

Steep a Quarter of a Pound of the Cuttings of white Glove-Leather in Water for ſome Time; then take them out, and boil them in three Quarts of Water till it waſtes to a Pint, and ſtrain it through a Cloth into an Earthen Pan. When the Size is cold if it feels firm under your Hand, it is ſtrong enough. You may prepare any Colours in this Size while it is warm, and it will take off the Glair which would appear upon them by Candle-Light, if mixed with Gum-Water.

To recover Colours when decayed.

Take Roſemary-Water double-diſtilled, or pure Spirit of Roſemary, and with a few Drops of it, temper your Colours, which, however dead and faded, will recover their Bloom and Brilliance.

This Water or Spirit will prevent the Bubbles in White and Umber, which are troubleſome in grinding.

CHAP.

CHAP. IX.

Method of Painting on SILK *or* SATTIN.

FIRST make an Outline according to your Fancy, then lay on a Waſh of Iſinglaſs, with great Care, which will remove the Glair and Sleekineſs of the Silk, being neceſſary to make your Colours work freely; melt the Iſinglaſs in clear Water, ſo as not to be very glutinous, otherwiſe it would ſpoil your Colours and diſcolour your Silk. Obſerve your Lights are to be made by a ſmall Tint (mixt with Flake White) of the Colour of the intended Flower, juſt ſufficient to make a Degree from the Colour of the Silk: For Inſtance, if a Blue Flower, a very ſmall Quantity of Bice or Verditer mixt with the White, uſing leſs of the White in proportion as the Shades grow darker; Indico may be uſed alone in the darkeſt Shades. Take care never to lay your Colours on the Silk thick, as then they will be apt to crack; to prevent which it may be proper to mix a little White Sugar-Candy with the Gum-Water. If your Flower is ſo deep as not to admit of a pure White, in any Part, lay on a priming of White, which being thoroughly dry, proceed to the ground Colour of the Flower, advancing gradually with the Shades, as before directed.

FINIS.

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